

REMARKS

This Amendment is filed in response to the Office Action filed on August 06, 2007. All objections and rejections are respectfully traversed.

Claims 1-35 are in this case.

Claims 26-35 were added to better claim the invention.

REQUEST FOR EXAMINER INTERVIEW

Applicant respectfully requests a telephonic interview with the Examiner after the Examiner has had an opportunity to consider this Amendment, but before the issuance of the next Office Action. The Applicant may be reached at 617-951-2500.

OBJECTION TO THE SPECIFICATION

At paragraph 4 of the Office Action, the examiner objected to the specification under 37 CFR §1.97 and §1.98 because the specification contained references to related applications. Applicant respectfully traverses this objection. According to MPEP 201.11 and 37 CFR §1.78, only references to which the current application is claiming the priority date of should be included in a cross reference section in the specification. Applicant's references in the specification, however, are merely examples of various components which the Applicant's current invention incorporates but does not claim the benefit of the earlier priority date. Therefore, the references pointed out are not related applications only merely related art/examples and are believed to be allowable in present form.

REJECTION UNDER 35 U.S.C. §102(b)

At paragraph 7 of the Office Action, claims 1-4, 8-12, and 16-21 were rejected under 35 U.S.C. §102(b) as being anticipated by "A Highly Available Network File

Server,” Proceedings of the Winter 1991 USENIX Conference, Bhide *et al.*, January 1991 (hereinafter “HA-NFS”).

The present invention, as set forth in representative claim 1, comprises:

1. A method for failover of a first device to a second device in a storage network, the method comprising steps of:

detecting a failure in the first device;

initializing a second virtual port on the second device;

configuring the second virtual port with an identity of a first virtual port on the first device; and

servicing a set of disks owned by the first device at the second device through the second virtual port.

HA-NFS discloses a system which contains two NFS servers sharing a number of SCSI buses. Each shared SCSI bus and disks connected to it have one server which is designated as the primary server. When the servers are operating normally, the disks are served only by their designated primary server. The primary server for each bus is selected such that the total load is balanced (statically) over the two servers. Additionally, each server acts as a backup for the other, thereby allowing access to the failed device’s data. In particular, each server has two network interfaces and two IP addresses, one being the primary interface/physical port and the other being a secondary interface/ physical port. During normal operation, the primary interface is used by the server. The secondary interface is only used by the server when it is impersonating the other server after the other server has failed. HA-NFS also implements the secondary server to be utilized when reintegrating the system after repair or maintenance.

Applicant respectfully urges that HA-NFS does not show Applicant’s claimed novel *configuring the second virtual port with an identity of a first virtual port on the*

first device and servicing a set of disks owned by the first device at the second device through the second virtual port.

Applicant's claimed invention is directed to a system and method for providing failover for a first device (server) to a second device (server) in a storage network by utilizing virtual ports rather than physical ports. Thus, instead of each device having two separate physical ports (one primary and one secondary), each device need only have one physical port having first (primary) virtual port and a second (secondary) virtual port. In particular, Applicant's invention detects when a first device in a storage network has failed, and initializes a second virtual port on a second device allowing access to data that is otherwise inaccessible during failure of the first device. To do this, the system configures the second (e.g., previously inactive/offline) virtual port with the identity of the first (i.e., primary or active) virtual port on the first/failed device, thereby allowing the second device to service a set of disks owned by the first/failed device through the use of the second virtual port on the second device.

HA-NFS does not disclose or address utilizing a virtual port on an alternate/second device to access/service a set of disks owned by a first device. In particular, HA-NFS specifically uses two physical ports/interfaces to access a server. As mentioned in Applicant's Background of the specification, a noted disadvantage of such failover configurations (i.e., as shown in HA-NFS) is the requirement for a second interface/physical port on the storage appliance, which necessitates that an additional port be located on any failover device. As the second port typically operates in a standby mode for the vast majority of time (e.g., at all times except during a failover), the requirement for a second physical port/interface (e.g., "port burn") not only increases the costs of the appliance and its associated routing hardware, but also increases the costs for a system administrator to establish and maintain such a clustered server configuration. In effect, a server failover configuration, as in HA-NFS, may require twice as many physical ports

on the server and switches (failover devices) as are normally needed without a failover configuration. It is thus an object of the present invention to provide a system and method for reducing port burn in a storage system. Applicant's invention claims a virtual port located on the second server/device to service the disks/storage devices owned by the first server rather than a physical port.

Again, HA-NFS only discloses the use of two physical ports on each server to provide failover. Conversely, Applicant's claimed novel invention uses virtual ports (accessible through one or more physical ports) on a server for failover, such that separate physical ports need not be maintained (i.e., reducing port burn).

Applicant respectfully urges that the HA-NFS is legally precluded from anticipating the claimed invention under U.S.C. §102(b) because of the absence from HA-NFS of Applicant's claimed novel *configuring the second virtual port with an identity of a first virtual port on the first device and servicing a set of disks owned by the first device at the second device through the second virtual port.*

REJECTION UNDER 35 U.S.C. §103(a)

At paragraph 8 of the Office Action, claims 5-7, 13-15, and 22-25 were rejected under 35 U.S.C. §103(a) as being unpatentable over HA-NFS and in view of Shea *et al.* U.S. Patent Publication No. 2004/0081087 published on April 29, 2004. Claims 5-7, 13-15, and 22-25 are dependant from independent claims 1, 12, and 20 that are believed to be in condition for allowance, and therefore claims 5-7, 13-15, and 22-25 are also believed to be in condition for allowance.

PATENTS
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All independent claims are believed to be in condition for allowance.

All dependent claims are believed to be dependent from allowable independent claims, and therefore in condition for allowance.

Favorable action is respectfully solicited.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,

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